Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve

UNITED STATES
DEPARTMENT OF AGRICULTURE
CIRCULAR No. 28

Washington, D. C.

Rev.ed.
follows

Issued May 1928
Revised November 1936

MARKET CLASSES AND GRADES OF CALVES AND VEALERS

By

DON J. SLATER
Marketing Specialist

and

M. T. FOSTER
Associate Livestock and Meat Technologist
Bureau of Agricultural Economics

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - Price 10 cents

CIRCULAR No. 28 Issued MAY 1928 Revised November 1936
UNITED STATES DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

MARKET CLASSES AND GRADES OF CALVES AND VEALERS

By Don J. Slater, *marketing specialist*, and M. T. Foster, *associate livestock and meat technologist, Bureau of Agricultural Economics*

CONTENTS

	Page		Page
Vealers and calves differentiated	1	Weight selections of slaughter calves	17
Definition of terms	2	Grades of slaughter calves	17
Vealer schedule	5	Grade descriptions of slaughter calves	17
Classes of vealers	6	Stocker and feeder calf schedule	24
Weight selections of vealers	7	Classes of stocker and feeder calves	25
Grades of vealers	7	Weight selections of stocker and feeder calves	26
Grade descriptions of vealers	8	Grades of stocker and feeder calves	26
Market uses for calves	15	Grade descriptions of stocker and feeder calves	27
Slaughter calf schedule	15		
Classes of slaughter calves	16		

VEALERS AND CALVES DIFFERENTIATED

Young bovine animals, popularly known as calves, are classified for market purposes as vealers, or veal calves, and calves, because of the marked difference in the character and quality of the meat produced by these animals, which is influenced or determined largely by their age and the kind or type of feed they have received.

As a general rule, young bovine animals 3 months or less in age produce a dressed carcass the meat of which is distinctly different from that obtained from young bovine animals that are older. The meat produced by a large percentage of young bovine animals that are approximately 3 months or less in age is known in the wholesale and retail meat trade as veal, whereas the carcasses produced by most of the young bovine animals that are over 3 months old are known in the wholesale and retail meat trade as calf carcasses.

These differences in the two kinds of meat—veal and calf carcasses—are not entirely the result of the animals' ages, but are due partly to the different kinds of feed that have made up the major part of the animals' ration during the greater part of their existence. Other factors being equal, the best veal carcasses are produced from animals that have been fed on whole milk exclusively and as a rule the quality of such meat varies directly with the proportion of whole milk contained in their ration.

Beyond approximately 3 months of age the meat of practically all young bovine animals takes on many of the characteristics of the meat that is produced by animals fed other than milk, although, as a rule, it also shows to a greater or lesser extent at least some of the characteristics that come from feeding milk.

As a rule it is impossible to determine either the exact age of an animal or the exact kind or type of carcass that animal will produce, hence, there is no hard-and-fast rule for separating the two groups. Experienced and expert stockmen, however, can determine both of these factors with a high degree of accuracy.

In this circular calves and vealers are differentiated by the definitions that follow:

DEFINITION OF TERMS

A vealer is a young bovine animal which has subsisted on a whole-milk diet or some other ration which produces a similar effect on the animal and its flesh. Vealers produce veal, and any bovine animal which is incapable of producing veal, belongs to one or another of the calf or cattle classes. As a rule, 12 weeks is the maximum age for vealers, though there are exceptions to this. Some animals, because of a change in diet or in methods of handling which affect the character of the meat, lose the characteristics of vealers at an earlier age and are classified as calves. On the other hand, strictly milk-fed individuals over 12 weeks old, might properly be classified as vealers.

Calves constitute a group of young bovine animals which have not attained sufficient age or maturity to be called cattle but which have passed the vealer stage. Stated differently, a calf has passed the vealer stage, and usually is several months old, but is less than a year of age.

The meat obtained from calves has some of the characteristics of both beef and veal. Any bovine animal which does not show evidence of a whole-milk diet or some other diet which will produce meat wholly comparable with that produced by a whole-milk diet, and which animal is not sufficiently mature to produce beef according to the generally accepted definition of the term, is a calf.

CONFORMATION

Conformation is the build, shape, outline, or contour of the animal. It is due largely to the size and shape of the bones and muscles and the proportions between the different parts of the animal, such as neck, shoulder, crop, back, loin, rump, etc. Hence, conformation is chiefly attributable to breeding, but sex condition exerts a powerful influence except in the case of very young animals. The fat covering or degree of finish is responsible for marked modifications of conformation, hence feeding and care have an important bearing. Standards of conformation depend, for practical purposes, upon the immediate use to which the animal is to be put. Grade for grade, a smoother and more rounded conformation, largely the result of finish or fat, is generally demanded in animals sold for immediate slaughter than in those which are to be used for stocker and feeder purposes.

Conformation is important because it influences to a considerable extent the proportion of carcass weight as related to the live weight,

or, in other words, the dressing percentage of the animal when slaughtered. It is of further importance because it determines, more than does any other factor, the percentage of flesh, both lean and fat meat, particularly the percentage of lean in the flesh, that will be found in the carcass of an animal. Its chief significance lies in the fact that it determines the percentage of the higher-priced cuts of meat as opposed to the lower-priced cuts which the animal will finally produce.

The conformation of vealers and calves involves the build or shape of the animal together with its thickness and evenness of fleshing. Vealers and calves when considered as one group present a wide range of variation with respect to these three aspects of their conformation.

In build or shape they may be rectangular and compact to a greater or lesser degree, or they may be angular and rangy to a larger or smaller extent. The rectangular animal is one which has a top line and underline that tend to be straight and level, along with lines of the sides that tend to be straight and parallel.

The angular animal is one which has a top line and underline that tend to be irregular and oblique, and with lines of the sides that have like characteristics.

The compact animal is relatively wide and deep in proportion to length of body, with a relatively short, wide head. It has a short, thick neck and legs that are relatively short in proportion to depth of body and which are more or less heavily muscled and wide apart.

The rangy animal is relatively narrow and shallow in proportion to length of body, with a relatively long, narrow head. It has a long, thin neck, and legs that are relatively long in proportion to depth of body and which are more or less lightly muscled and close together.

In fleshing (flesh meaning both the fat and lean meat) vealers and calves may be thickly fleshed to a greater or lesser degree or they may be thinly fleshed to a smaller or greater extent. In the thick-fleshed animal the lines of each part are more or less full and rounded out. In the thin-fleshed animal the lines of each part are depressed or sunken to a lesser or greater degree.

Evenness of fleshing refers to the thickness of flesh covering the different parts of the animal such as shoulders, back, loin, rump, thigh, and twist. The flesh is naturally thicker in some parts than in others. For example, the thigh and twist are usually the thickest fleshed parts. The fleshing of some animals is much more uniform and even in thickness than that of other individuals. An animal that is evenly fleshed tends to be of the same or uniform width from the fore to the rear part of its body, whereas the animal that is unevenly fleshed varies to a lesser or greater extent in width of body. For example, the body may be considerably less wide through the shoulders and back than through the loin and rump or it may be lacking in width of loin and back as compared with width of shoulders and rump.

FINISH

Finish is fat. In the live animal, finish involves the quantity, quality, and distribution of fat. It is dependent somewhat upon

inherited tendencies or breeding and to a certain extent on sex condition and age, but in the main it depends upon the quantity, kind, and quality of feed and upon methods of handling and care.

In the carcass, finish includes the external fat and the fat on the inside of the abdominal and thoracic cavities as well as the intermuscular and intramuscular fat. Naturally in the live animal the interior fats can be judged only by analogy.

Finish is important because in most animals it influences probably more that does any other factor, the proportion of carcass weight as related to live weight or the dressing percentage of an animal. It also determines to a great extent the quantity of intramuscular or intercellular fat that will be found within the muscle or lean meat of the animal and it influences greatly the percentage of flesh to bone and the varying percentages of lean, fat, bone, and connective tissue that the animal will have in its carcass when slaughtered.

The finish of vealers and calves involves the fat covering of the animal and the quality of its fat. The fat covering of vealers and calves is naturally thicker on some parts than on other parts of the body. On the very fat animal the fat is usually thickest over the brisket, in the flank, and in the crotch, and there is a moderately thick fat covering over the back and loin and a considerable thickness of fat over the top of the shoulders and the rump. As a general rule the quality of the fat of vealers and calves is directly correlated with its degree of thickness; that is, the greater the thickness the higher the quality of the fat. Hence, the degree of finish of vealers and calves depends almost entirely upon the varying degrees of thickness of the fat covering that is found over certain parts of the animal's body.

When considered as one group, either vealers, slaughter calves, or stocker and feeder, calves present a rather wide range of variation with respect to these two aspects of their finish. Comparatively speaking, the fat covering may be thick to a greater or lesser degree or it may be thin to a smaller or larger extent. The animal with a thick fat covering is smooth to a lesser or greater extent over the shoulders, back, loin, hips, and rump and has a less or greater degree of fullness in the brisket, the flanks, and in the crotch around the udder and cod or scrotum. The animal with a thin fat covering is rough to a lesser or greater extent over the shoulders, back, loin, and rump and the bones of its shoulders, hips, and much of the backbone have a lesser or greater degree of prominence. A characteristic of animals with a thin fat covering or low degree of finish is a lack of fullness in such parts as the brisket, flanks, and crotch, and around the udder and cod or scrotum.

QUALITY

Quality in the live animal is indicated by its breeding, general refinement, thickness of muscling, size of bone, thickness and pliability of hide, fineness and conditions of hair, and sex condition, in relation to type and breeding.

When considered as one group, vealers and calves present a rather wide range of variation with respect to these different physical characteristics involved in quality.

Some individuals have the physical characteristics peculiar to animals of beef-type breeding to a lesser or greater extent, whereas others have the physical characteristics resulting from dairy-type and from scrub, or nondescript breeding to a lesser or greater degree. Some animals have an ideal degree of refinement, the bones of the legs being of medium size and the hide of medium thickness; others range from a slight to an extreme degree of refinement or coarseness, the bones of the legs ranging from slightly too small to extremely small or from slightly too coarse to extremely coarse, and the hide from slightly too thin to extremely thin, or from slightly too thick to extremely thick. The hide of some animals is pliable to a lesser or greater extent, whereas that of other individuals is more or less unpliant. The hair of some animals is more or less fine, silky, and glossy, whereas the hair of others is coarse, dry, and harsh to a lesser or greater extent.

Some animals have a moderately high to a very high degree of finish and others a slightly low to an extremely low degree of finish. These varying degrees of finish may accompany quite similar degrees of quality.

In animals intended for further feeding, quality involves still another characteristic, one which, though of great importance, is rather intangible and difficult to describe fully, namely, the ability to take on added weight satisfactorily in relation to the quantity and kind of feed consumed. In the case of older animals most of the gain results from additional fat or finish but in the case of young animals the gain results from growth as well as from additional fat or finish.

Experienced stockmen can judge quality with fair accuracy from certain external evidences, such as fineness and softness of hair, thickness and pliability of hide, width of muzzle, refinement of head, and other characteristics. Frequently these external evidences are called quality. When this is done it amounts to mistaking the tangible, external evidences of a thing for the thing itself. Quality is primarily the result of breeding, but it varies greatly with the degree of fatness and age of the individual. Quality is influenced also to a considerable extent by sex condition, the kind of feed the animal has had, and methods of care and handling.

VEALER SCHEDULE

Vealers consist of a group of young milk-fed bovine animals usually not over 3 months of age.

When slaughtered, vealers produce veal which usually is distinctly different from the meat produced by calves or cattle. Vealers also produce considerable quantities of byproducts, the most important of which are the skin and edible offal, such as the liver, tongue, heart, brains, sweetbreads, and fat.

The carcass and the byproducts obtained from vealers vary widely both in weight and grade. It has been demonstrated by experience that there is a high degree of correlation between (1) the weight and the conformation, finish, and quality of vealers, and (2) the weight and grade of the carcass and other products obtained when they are

slaughtered. Because of these facts vealers having different weights and different degrees of conformation, finish, and quality have different values on the market and usually sell within a spread of prices which reflect more or less accurately the weight and grade of the carcass and other products that they will produce when slaughtered. Thus certain weight-selection groups and grades of vealers have arisen which are rather generally recognized in the trade at many of the large central livestock markets. These have been incorporated in the vealer schedule.

At most livestock markets vealers make up a fairly large percentage of the receipts of livestock of the bovine species. The principal markets for vealers are, as a rule, those which are located nearest the sections of the country where dairying is one of the chief farming activities. For example, such markets as Chicago, South St. Paul, Milwaukee, Detroit, Buffalo, and Jersey City are outstanding for the number of vealers included in their livestock receipts. During the late spring and early summer months, receipts of vealers at these and other markets are generally at their height, but considerable numbers of them are generally on sale each marketing day throughout the year.

Vealer schedule

Class	Weight selection	Grade
Males and females	Lightweight, 110 pounds down.	Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Mediumweight, 110 to 180 pounds.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Heavyweight, 180 pounds up.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3.

[1] Formerly designated Common.

CLASSES OF VEALERS

It will be noted from the schedule that vealers are not divided into classes. If any useful purpose were to be accomplished by so doing, vealers could be divided into three market classes as are calves—that is, into steers, heifers, and bulls. But practically no vealers are found on the market which are steers and as all vealers are very young their sex condition has not had sufficient time to exert a material influence on their physical characteristics. Hence, vealers of different sex conditions do not have differences of conformation, finish, and quality that are sufficiently large to justify their division into classes.

In spite of this fact, it probably is true that, taken as a whole, male vealers will average slightly higher than females in their degree of conformation, whereas females will average slightly higher

than do males in their degree of finish. There will probably be little or no difference in the degree of quality between male and female vealers. Because of these facts, little, if any, attention is paid to the sex condition or class of vealers on the market and they are usually bought and sold wholly on the basis of weight and grade.

WEIGHT SELECTIONS OF VEALERS

Vealers do not vary greatly in age. Practically all of them are at least 3 weeks old and relatively few are over 3 months old. Hence, they do not have a very wide range in weight; only a relatively small percentage of them weigh less than 100 pounds or more than 200 pounds. Most of the range in weight is due to differences in age, but a considerable part of it is the result of differences in breeding, feeding, handling, and care.

The live weight of the animal within a grade largely determines the weight of the carcass as well as the weight and size of the wholesale and retail cuts which the carcass will produce. Prices of vealers of different weights reflect the generally wide range of prices received in the wholesale and retail meat trade, for carcasses, and for wholesale and retail cuts of different weights and sizes. Accordingly, on the live market, weight is a price factor of great importance and vealers are often sorted into several lots according to their weight, and these lots are designated as weight selections.

A weight selection of vealers consists of a group of vealers in which the weight of each individual composing the group falls within certain specified limits.

The weight selections of vealers which are most generally recognized at the present time are shown in the vealer schedule, page 6.

GRADES OF VEALERS

The weight selections enable slaughterers to buy vealers of any desired weight. Thus they obtain carcasses of the weight which in turn, will produce wholesale and retail cuts of the desired weight and size. But as vealers of any given weight selection vary widely in grade, slaughterers must also buy vealers of various grades that will produce carcasses and cuts of grades with which to supply the varying demands of their patrons.

In the final analysis, therefore, vealers are bought and sold largely on the basis of their grade. Accordingly, as the final step in the classifying and grading process, the weight selections of vealers often are sorted into a number of grades.

The grade of an animal is determined by its degree of merit for a given market use as shown by the degrees of conformation, finish, and quality which it possesses.

There are six grades of vealers: Prime or No. A1, Choice or No. 1, Good or No. 2, Medium or No. 3, Plain or No. 4, and Cull or No. 5.

The grades of slaughter vealers and calves are based upon and are directly correlated with the grades of the carcasses which they will produce when slaughtered.

GRADE DESCRIPTIONS OF VEALERS

PRIME OR NO. A1 GRADE VEALERS

Prime or No. A1 grade vealers are very nearly ideal in conformation, finish, and quality. They are rectangular and compact in general shape or build. Top line and underline are very nearly straight and level and the lines of the sides are very nearly straight and parallel. The head is very short and wide and the neck is very short and thick. Both head and neck are very wide and deep in proportion to length of body, and the legs are very short in proportion to depth of body and are set very wide apart. The shoulders, back, loin, rump, thigh, and twist are very thickly fleshed and the

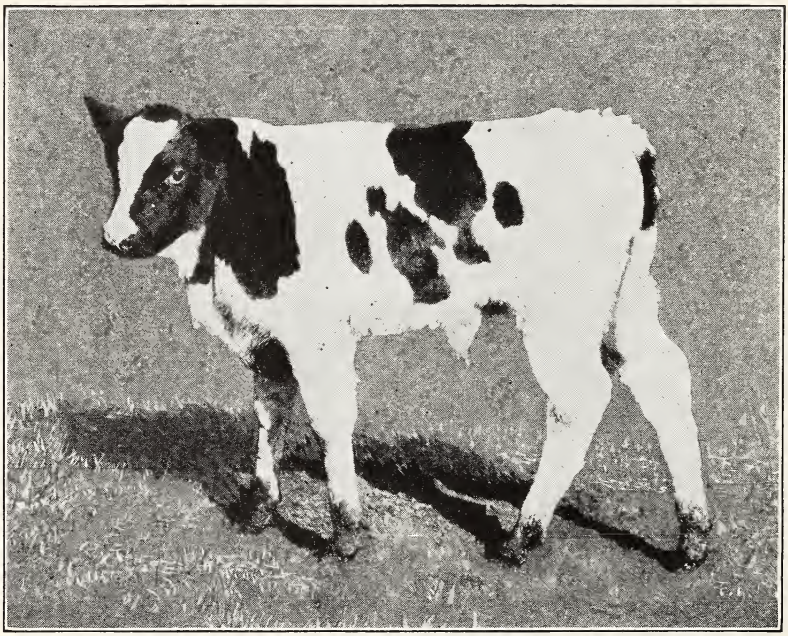

FIGURE 1.—Prime grade vealer.

lines of each of these parts are full, plump, and well rounded. The animal is of approximately the same width through the shoulders, back, loin, and rump.

There is a slightly thin covering of fat over the back, loin, rump, and the top of the shoulders, and the animal is very smooth over the shoulders, back, loins, hips, and rump. There are large deposits of fat over the brisket, in the flanks, and in the crotch, especially around the udder or the scrotum, the quantity of fat being indicated by a marked degree of fullness in these parts.

The general appearance of the animal is very neat and trim, reflecting superior breeding, feeding, handling, and care. The bones of the legs are of medium size and the hide is moderately thick and very pliable. The hair is fine and silky and usually has a decided gloss, luster, or sheen.

Individuals of this grade (fig. 1) have a very high dressing percentage. Their carcasses have a very large percentage of flesh, and a very small percentage of bone.

They are almost invariably crossbred or high-grade individuals of beef type, but may be of dairy breeding. They are usually very scarce at all markets at all seasons of the year, but during the late spring and early summer months considerable numbers of them are received at some of the largest markets. They are usually from 4 to 8 weeks old and usually weigh from 140 to 180 pounds.

CHOICE OR NO. 1 GRADE VEALERS

Choice or No. 1 grade vealers are markedly superior in conformation, finish, and quality. They are approximately rectangular and have a high degree of compactness. Top line and under line are very

FIGURE 2.—Choice grade vealer.

nearly straight and level and the lines of the sides are very nearly straight and parallel. The head is short and wide and the neck is short and thick. Such vealers are wide and deep in proportion to length of body, and the legs which are short in proportion to depth of body, are set wide apart. The shoulders, back, loin, rump, twist, and thigh are thickly fleshed and the lines of each of these parts are moderately full, plump, and rounded. The animal is of nearly the same or uniform width through the shoulders, back, loin, and rump.

There is a thin covering of fat over the back, loin, rump, and the top part of the shoulders, and the animal is moderately smooth over these parts and the hips. There are moderately large deposits of fat over the brisket, in the flanks and in the crotch, especially around the

udder or the scrotum, which are indicated by the moderate degree of fullness of these parts.

The animal has a moderate degree of refinement. The bones of the legs are of medium size. The hide is moderately thick and pliable and the hair is fine and silky and has a decided gloss, luster, or sheen.

Individuals of this grade (fig. 2) have a high dressing percentage. Their carcasses have a high percentage of flesh, and a small percentage of bone.

Many vealers of this grade are of beef-type or dual-purpose cattle breeding but a considerable number of them are from the larger breeds of dairy-type cattle. They are regularly on sale at most markets, especially at the principal markets for vealers, throughout the year. The season of greatest supply occurs during April, May, and June. They are usually from 3 to 6 weeks old and usually weigh from 110 to 140 pounds.

GOOD OR NO. 2 GRADE VEALERS

Good or No. 2 grade vealers have a moderately high degree of conformation, finish, and quality. In general build or shape they tend to be rectangular and compact. Top line and under line tend to be straight and level and the lines of the sides tend to be straight

FIGURE 3.—Good grade vealer.

and parallel. The head is moderately short and wide and the neck is moderately short and thick. Both head and neck are moderately wide and deep in proportion to length of body. The legs are moderately short in proportion to depth of body and are set moderately wide apart. The flesh which covers the shoulders, back, loin, rump, thigh, and twist is moderately thick. The lines of each of these parts are slightly sunken or hollowed. The width of the animal through the shoulders, back, loin, and rump varies slightly.

There is a very thin covering of fat over the back and loin. The animal is slightly rough over the shoulders, back, loin, hips, and rump and the bones of these parts are slightly prominent. There are rather small deposits of fat over the brisket, in the flanks, and in the crotch, the small degree of fat being indicated by a slight degree of emptiness of these parts.

The animal is either slightly too refined or too coarse and the bones of the legs are either slightly too small or too large. The hide is either slightly too thin or too thick and is slightly unpliant. The hair is slightly dry and harsh and lacks the gloss, luster, or sheen characteristic of the hair of vealers of a higher degree of quality.

Individuals of this grade (fig. 3) have a moderately high dressing percentage. Their carcasses have a moderately high percentage of flesh, and a slightly small percentage of bone.

Individuals of this grade may be of any type of breeding, but the grade includes relatively few animals in which the blood or characteristics of the smaller breeds of dairy-type cattle predominates. They weight usually from 100 to 120 pounds and are generally from 3 to 6 weeks old. At the principal markets for vealers they are on sale regularly throughout the year; the season of largest supply occurs during April, May, and June.

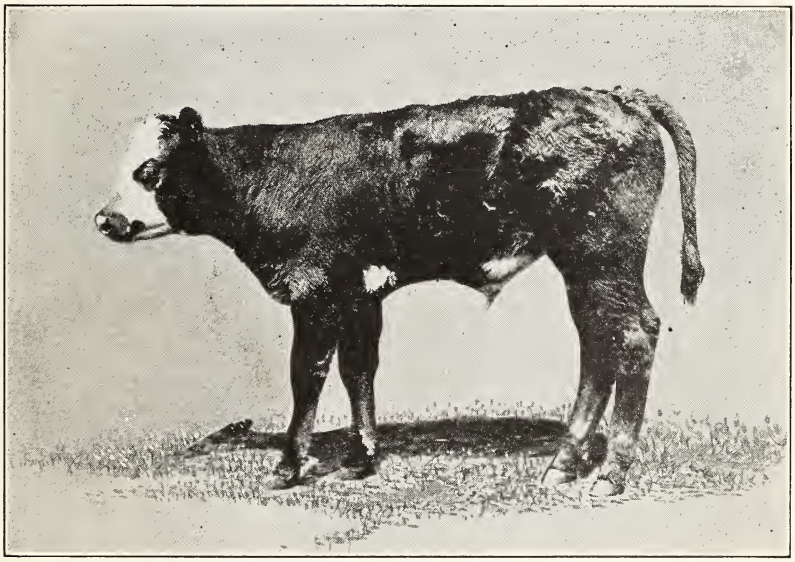

FIGURE 4.—Medium grade vealer.

MEDIUM OR NO. 3 GRADE VEALERS

Medium or No. 3 grade vealers are slightly deficient in conformation, finish, and quality. They are slightly angular and rangy in their general build or shape. Top line and under line and the lines of the sides are slightly irregular and oblique. The head is slightly long and narrow and the neck is slightly long and thin. The body is slightly narrow in proportion to its length and the legs which

are slightly long in proportion to depth of body are set slightly near together. The flesh covering the shoulders, back, loin, rump, thigh, and twist is slightly thin and the lines of these parts are slightly sunken or hollowed. The width of the animal through the shoulders, back, loin, and rump varies considerably.

There is an extremely thin covering of fat over the back and loin and the animal has a high degree of roughness over the shoulders, back, loin, hips, and rump, the bones of these parts being prominent to a marked degree. There are very small deposits of fat over the brisket, in the flanks, and in the crotch around the udder or the scrotum.

The animal is either slightly too refined or too coarse and the bones of the legs either slightly too small or too large. The hide is either slightly too thin or too thick and is slightly unpliant. The hair is slightly dry and harsh and lacks the luster, gloss, or sheen which is characteristic of the hair of vealers in the Choice and Prime grades.

Individuals of this grade (fig. 4) have a slightly low dressing percentage. Their carcasses have a slightly low percentage of flesh and a moderately large percentage of bone.

A considerable number of individuals of this grade are of beef-type breeding but they are largely of dairy-type, scrub, or nondescript breeding. They usually weigh from 90 to 110 pounds and are usually from 3 to 6 weeks old. They are regularly on sale at the principal markets for vealers throughout the year; the season of largest marketings extends from about April 1 to July 1 of each year.

PLAIN OR NO. 4 GRADE VEALERS

Plain or No. 4 grade vealers are very deficient in conformation, finish, and quality. Their general build or shape is very angular and rangy. Top line and underline and the lines of the sides are very irregular and oblique. The head is very long and narrow and the neck is very long and thin. Both head and neck are very narrow in proportion to length of body and the legs are very long in proportion to depth of body and are set very close together. The flesh covering of the shoulders, back, loin, rump, thigh, and twist is very thin and the lines of each of these parts are very sunken or hollowed. The width of the animal through the shoulders, back, loin, and rump varies to a very great extent.

There is no apparent fat covering over the shoulders, back, loin, or rump and the animal is very rough over these parts. The bones of the shoulders and hips and much of the backbone are very prominent. There are extremely small deposits of fat over the brisket, in the flanks, and in the crotch around the udder or the scrotum, the lack of fat deposits being indicated by a very high degree of emptiness in these parts.

The animal is either very refined or very coarse and the bones of the legs are either very small or very large. The hide is either very thin or very thick and is very unpliant. The hair is very coarse or very fine and very dry and harsh.

Individuals of this grade (fig. 5) have a very low dressing percentage. Their carcasses have a very low percentage of flesh and a large percentage of bone.

Animals of this grade may be of beef-type breeding, but they are almost invariably of dairy-type, scrub, or nondescript breeding. They vary from about 90 pounds up to 180 pounds in weight, but generally weigh from 120 pounds downward. For the most part they are less than 6 weeks old, but some of them range up to approximately 3 months of age. They are regularly on sale throughout the year at the principal markets for vealers; their season of greatest supply is almost identical with that of other grades of vealers.

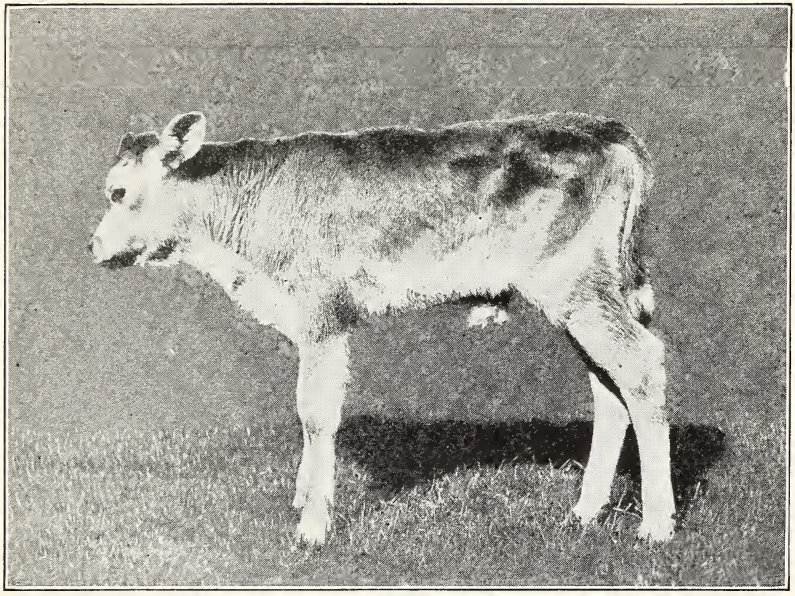

FIGURE 5.—Plain grade vealer.

CULL OR NO. 5 GRADE VEALERS

Cull or No. 5 grade vealers are extremely deficient in conformation, finish, and quality. They are extremely angular and rangy in general build or shape. Top line and underline and the lines of the sides are extremely irregular and oblique. The head is extremely long and narrow and the neck is extremely long and thin. The body is extremely narrow in proportion to its length and the legs are extremely long in proportion to depth of body and are set extremely close together. The flesh which covers the shoulders, back, loin, and rump is extremely thin and the lines of these parts are extremely empty, sunken, or hollowed. The width of the animal through the shoulders, back, loin, and rump varies greatly.

It is very evident that there is no fat covering over the shoulders, back, loin, or rump and the animal is very rough over these parts. The bones of the shoulders and hips and much of the backbone are extremely prominent and the major portion of the bones of the ribs are plainly outlined. To all appearances there are no deposits of fat over the brisket, in the flanks, or in the crotch around the udder or the scrotum.

The animal is either extremely refined or extremely coarse. The bones of the legs are either extremely small or extremely large. The hide is either extremely thin or extremely thick and is extremely unpliant. The hair is extremely dry and harsh, as a rule.

Individuals of this grade (fig. 6) have an extremely low dressing percentage. Their carcasses have an extremely low percentage of flesh, practically none of which is fat, and a very large percentage of bone.

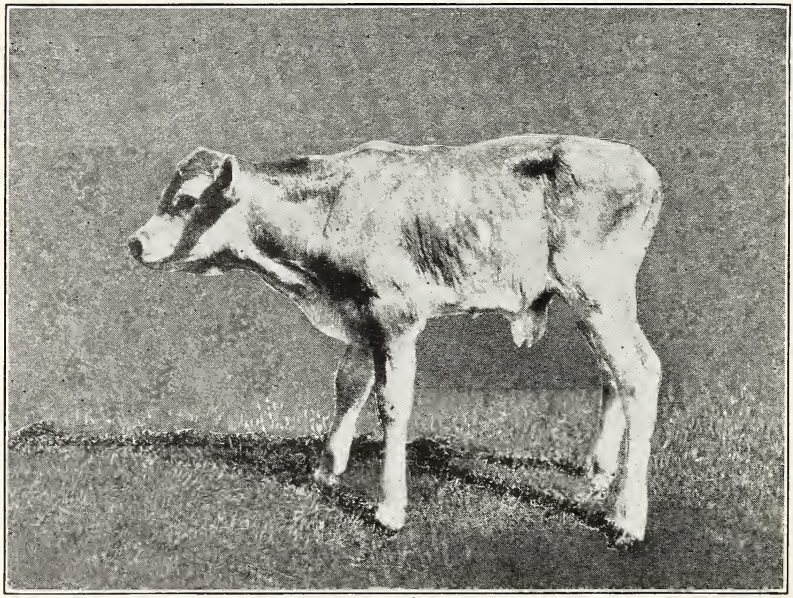

FIGURE 6.—Cull grade vealer.

Cull or No. 5 grade vealers may be of pronounced beef-type breeding but are almost invariably of dairy-type, scrub, or nondescript breeding. As a rule, they weigh less than 100 pounds and are usually not over 3 weeks old, although a considerable number of individuals of this grade range up to 8 or more weeks in age. They comprise a relatively small proportion of the receipts of vealers at any market.

MARKET USES FOR CALVES

Practically all large central markets receive a considerable number of calves on each marketing day throughout the year, although at some markets calves make up a much larger percentage of the total receipts of bovine stock than at others. The principal markets for calves are, as a rule, those that are located nearest the range country, particularly the southwestern part of the range territory. Consequently, Fort Worth, Kansas City, and East St. Louis receive larger numbers of calves than most of the other large markets. During the late summer and fall months receipts of calves at these markets are especially large. Usually calves that are received at these and other markets, such as Omaha, St. Joseph, Denver, and Sioux City, which are located nearest the range country, are of the better grades, whereas calves received at South St. Paul, Milwaukee, Chicago, and other markets located nearest the principal dairy sections of the country are largely of the lower grades.

Calves intended for meat-production purposes naturally are divided into two major groups according to the use for which they are bought and sold, namely slaughter calves and stocker and feeder calves.

SLAUGHTER CALF SCHEDULE

Slaughter calves may be defined as young bovine animals, less than 12 months of age, which for a considerable length of time have subsisted in part or entirely on other feeds than milk, that are bought and sold for immediate slaughter. This designation covers any calf which will produce meat that is wholesome and fit for human food.

Calves, when slaughtered, produce calf carcasses and considerable quantities of byproducts, the most important of which are the skin and edible offal, such as the liver, tongue, heart, brains, sweetbreads, and fat. The carcasses as well as the byproducts obtained from calves vary widely both in quantity and quality.

Experience has shown that there is a high degree of correlation between (1) the weight and the physical characteristics which were described under conformation, finish, and quality possessed by calves and (2) the weight and grade of the carcass and other products obtained from them when slaughtered. Therefore, on the market, calves having different weights and different degrees of conformation, finish, and quality have different values and usually sell at prices which reflect accurately the weight and the grade of the carcass and byproducts which they will produce. Thus, certain market classes, weight-selection groups, and grades of slaughter calves have arisen which are rather generally recognized in the trade at most of the large central livestock markets. These have been incorporated into the system of tentative market classes and grades of slaughter calves shown in the following schedule.

Slaughter calf schedule

Class	Weight selection	Grade
Steer	Lightweight, 200 pounds down.	Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Mediumweight, 200 to 300 pounds.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Heavyweight, 300 pounds up.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
Heifer	Lightweight, 200 pounds down.	Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Mediumweight, 200 to 300 pounds.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Heavyweight, 300 pounds up.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
Bull	Lightweight, 200 pounds down.	Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Mediumweight, 200 to 300 pounds.	Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1] Cull or No. 5.
	Heavyweight, 300 pounds up.	Prime or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]

[1] Formerly designated Common.

CLASSES OF SLAUGHTER CALVES

A market class of slaughter calves consists of a lot or group of slaughter calves in which each individual has the same sex condition. There are three classes of slaughter calves—steer, heifer, and bull.

In time, sex condition causes marked changes in the conformation, finish, and quality of an animal, which changes are reflected in the quantity and quality of the carcass of meat and byproducts obtained from it. In the case of very young calves, sex condition has not had time to cause material modification in their conformation, finish, and quality. Hence, in many instances the trade disregards the class. In such cases the calves are sold largely on the basis of weight and grade without regard to their sex condition.

WEIGHT SELECTIONS OF SLAUGHTER CALVES

Slaughter calves, as a whole, display considerable variation in weight. Much of this range in weight is the result of a difference in age but a large part of it is due to differences in breeding, feeding, handling, and care. The live weight of the animal, other things being equal, largely determines the weight of the carcass as well as the weight and size of the wholesale and retail cuts which the carcass will produce. Prices of slaughter calves of different weights reflect the wide range of prices received in the wholesale and retail meat trade for carcasses, and for wholesale and retail cuts of different weight and size. Accordingly on the live market, weight is a price factor of great importance and slaughter calves are often sorted according to their weight into several different lots which in this bulletin are designated as weight selections.

A weight selection of slaughter calves may be defined as a number or lot of slaughter calves in which the weight of each individual composing the lot falls within certain specified limits.

The weight selections which are in more or less general use at the most highly developed and specialized livestock markets at the present time are shown in the schedule of slaughter calves, page 16.

GRADES OF SLAUGHTER CALVES

Weight selections enable slaughterers to buy slaughter calves of any desired weight. Thus they obtain carcasses of the weight which will in turn produce wholesale and retail cuts of the desired weight and size. But as calves of any given weight selection vary widely in grade, slaughterers must also buy calves of various grades that will produce carcasses and cuts of grades with which to supply the varying demands of their patrons.

In the final analysis, therefore, all slaughter calves are bought and sold largely on the basis of their grade. Accordingly, as the final step in the classifying and grading process, the weight selections are often sorted into a number of grades.

The grade of an animal is determined by its degree of merit for a given market use, as shown by the degrees of conformation, finish, and quality which it possesses.

GRADE DESCRIPTIONS OF SLAUGHTER CALVES

There are six grades of slaughter calves: Prime or No. A1, Choice or No. 1, Good or No. 2, Medium or No. 3, Plain or No. 4, and Cull or No. 5.

PRIME OR NO. A1 GRADE SLAUGHTER CALVES

Prime or No. A1 grade slaughter calves are very nearly ideal in conformation, finish, and quality. They are rectangular and very compact in general shape or build. Top line and underline are very nearly straight and level and the lines of the sides are very nearly straight and parallel. The head is very short and wide and the neck is very short and thick. The body is very wide and deep in proportion to its length. The legs are set very wide apart and are

very short in proportion to depth of body. The shoulders, crops, back, loin, thigh, and twist are very thickly fleshed and the lines of each of these parts are very full, plump, and well rounded. The animal is of approximately the same width through the shoulder, back, loin, and rump. The different parts are developed and balanced so that the animal has very nearly the highest possible percentage of its weight in back, loin, rump, thigh, and twist, or in those parts which furnish the higher-priced cuts of meat.

The animal has a thick covering of fat over the back and loin, and a moderately thick covering over the top of the shoulders and the rump, and is very smooth over the shoulders, crops, back, loin, hips, and rump. There are large deposits of fat over the brisket, in the flanks, and in the crotch, especially around the udder or the cod or scrotum, and these parts are decidedly full and well rounded.

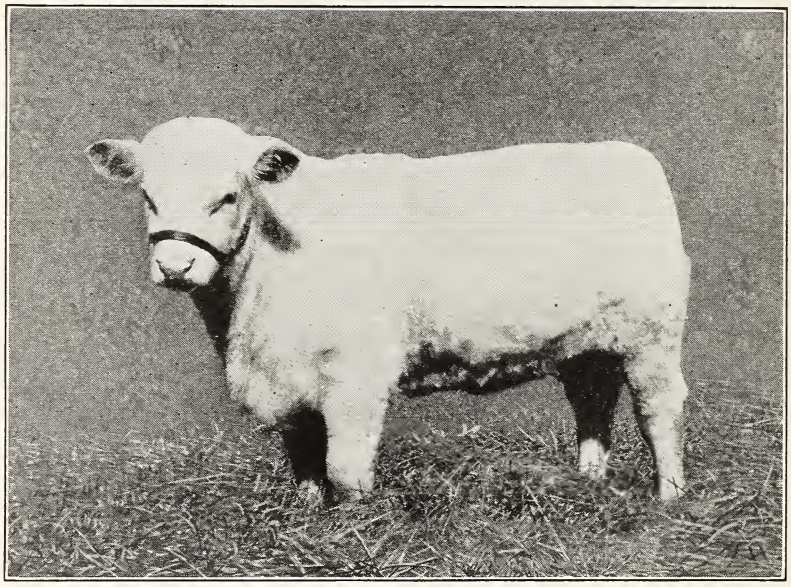

FIGURE 7.—Prime grade slaughter calf.

The animal is exceptionally neat, trim, and clean-cut in appearance, reflecting the very best of beef-type breeding, handling, and care. The bones of the legs are of medium size and the hide is moderately thick and very pliable. The hair is fine, soft, and silky and has a decided gloss, luster, or sheen.

With the factor of fill eliminated, individuals of this grade (fig. 7) have a very high dressing percentage. Their carcasses have a very high percentage of flesh and almost the lowest possible percentage of bone.

Individuals of this grade are as a rule cross-bred or very high-grade animals of beef-type breeding. They are extremely scarce at all markets, and are offered only occasionally at any market.

CHOICE OR NO. 1 GRADE SLAUGHTER CALVES

Choice or No. 1 grade slaughter calves are markedly superior in conformation, finish, and quality. Their general build or shape

is approximately rectangular and is compact. Top line and underline are nearly straight and level and the lines of the sides are nearly straight and parallel. The head is short and wide and the neck is short. The body is wide and deep in proportion to its length. Legs are set wide apart and are short in proportion to depth of body. The shoulders, crops, back, loin, rump, thigh, and twist are thickly fleshed and the lines of each of these parts are full, plump, and well rounded. The animal is of approximately the same width through the shoulders, back, loin, and rump.

The animal has a moderately thick covering of fat over the back and loin and a moderately thin covering over the top of the shoulders and rump, and is smooth over these parts. There are moderately large deposits over the brisket, in the flank, and in the crotch, especially around the udder or the cod or scrotum, and these parts are moderately full and rounded out.

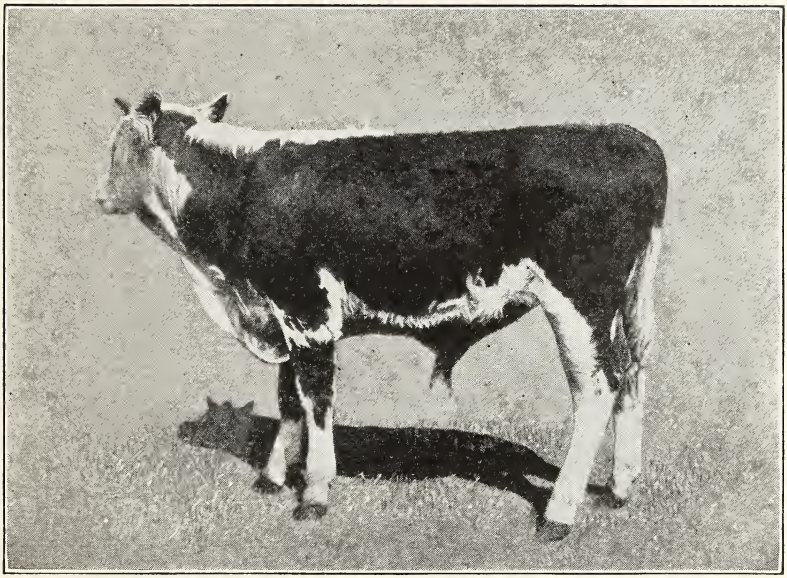

FIGURE 8.—Choice grade slaughter calf.

The general appearance of the animal is neat and trim, reflecting very superior beef-type breeding, feeding, care, and handling. The bones of the legs are of medium size and the hide is moderately thick and pliable. The hair is fine, soft, and silky.

With the factor of fill eliminated, individuals of this grade (fig. 8) have a high dressing percentage. Their carcasses have a high percentage of flesh and a very low percentage of bone. Individuals of this grade are almost invariably cross-bred or high-grade animals of beef-type breeding. They are relatively scarce at all markets, but considerable numbers of them are usually received at the larger central markets during the late summer and fall months. During the remainder of the year they are found only rarely at any market.

GOOD OR NO. 2 GRADE SLAUGHTER CALVES

Good or No. 2 grade slaughter calves have a moderately high degree of conformation, finish, and quality. They tend to be rectangular and are moderately compact. Top line and underline tend to be straight and level and the lines of the sides tend to be straight and parallel. The head is moderately short and wide and the neck is moderately short. The body is moderately wide and deep in proportion to its length. The legs are moderately short in proportion to depth of body and are set moderately wide apart. The flesh of the shoulders, crops, back, loin, rump, thigh, and twist is moderately thick and the lines of each of these parts are moderately full, plump, and rounded out. The animal tends to have the same width of body through the shoulders, back, loin, and rump.

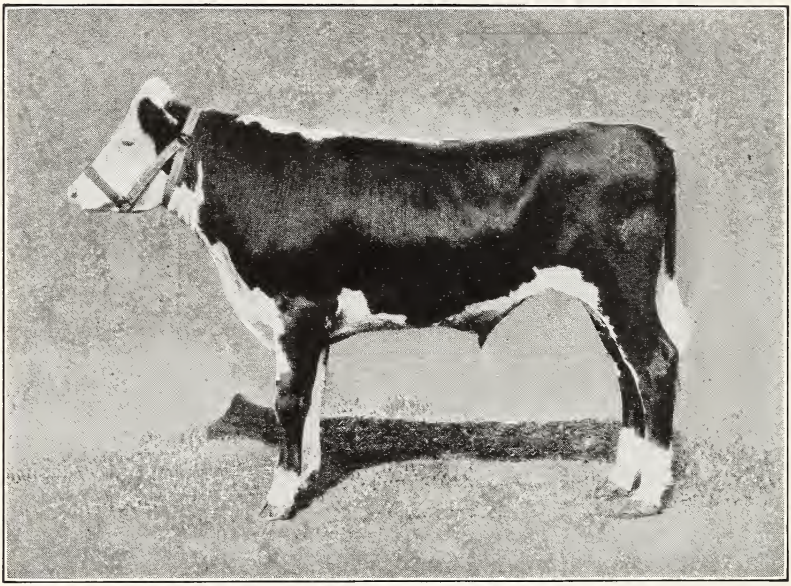

FIGURE 9.—Good grade slaughter calf.

The animal has a slightly thin covering of fat over the back and loin and a very thin covering over the top of the shoulders and rump, together with a moderately high degree of smoothness over these parts. There are slightly small deposits of fat over the brisket, in the flanks, and in the crotch, especially around the udder or the cod or scrotum, and these parts appear slightly empty.

The animal is either slightly too coarse or too refined. The bones of the legs are either slightly too large or too small and the hide is slightly too thick or too thin, but is moderately pliant. The hair is fine and moderately soft and silky.

With the factor of fill eliminated, individuals of this grade (fig. 9) have a moderately high dressing percentage. Carcasses obtained from them have a moderately high percentage of flesh and a low percentage of bone. They are usually cross-bred or high-grade indi-

viduals of beef-type breeding. They are marketed in liberal numbers during the late summer and fall months, but at other seasons of the year, at most markets, relatively small numbers of them are on sale.

MEDIUM OR NO. 3 GRADE SLAUGHTER CALVES

Medium or No. 3 grade slaughter calves are slightly deficient in conformation, finish, and quality. They are slightly angular and

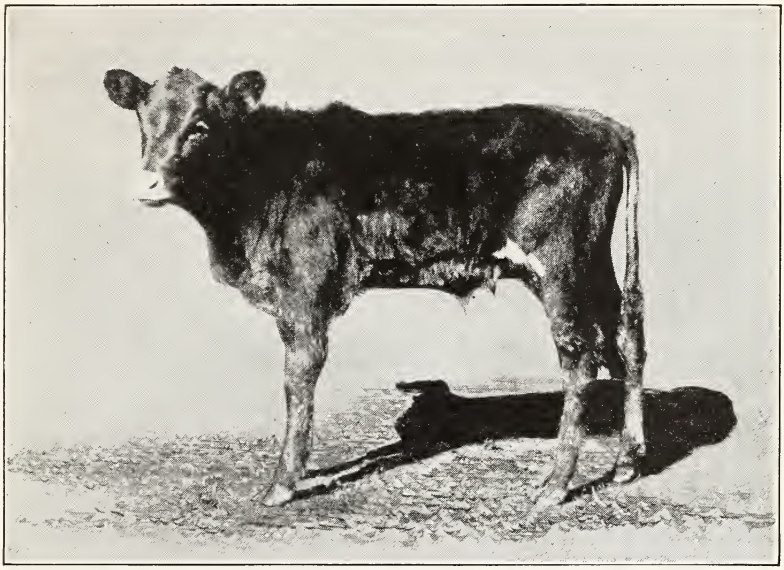

FIGURE 10.—Medium grade slaughter calf.

rangy as regards general shape or build. The head is slightly long and narrow and the neck is slightly long and thin. The top line and underline and the lines of the sides are slightly irregular and oblique. The body is slightly narrow in proportion to its length. The legs are slightly long in proportion to depth of body and are set slightly too close together. The fleshing of the shoulders, crops, back, loin, rump, twist, and thigh, is slightly thin and the lines of each of these parts are slightly empty, sunken, or hollowed out. The width of body through the shoulders, back, loin, and rump varies slightly.

The fat covering over the top of the shoulders and rump is extremely thin and is very thin over the back and loin. The bones of the shoulders, the hips, and much of the backbone are slightly prominent. There are small deposits of fat over the brisket, in the flank, and in the crotch, especially around the udder or the cod or scrotum, but these parts are decidedly empty in appearance.

The animal is either slightly too coarse or too refined. The bones of the legs are slightly too large or too small and the hide is slightly too thick or too thin and is slightly unpliant. The hair tends to be dry and harsh and is slightly lacking in oiliness.

With the factor of fill eliminated, slaughter calves of this grade (fig. 10) have a slightly low dressing percentage. Their carcasses

have a slightly low percentage of flesh and a moderately large percentage of bone. Slaughter calves of this grade are mostly individuals of pronounced beef-type breeding but usually show more or less of the physical characteristics of animals which are of dairy type, scrub, or nondescript breeding. They are found usually throughout the year at most large markets and during the late summer and the fall months the supply is relatively large.

PLAIN OR NO. 4 GRADE SLAUGHTER CALVES

Plain or No. 4 grade slaughter calves are very deficient in conformation, finish, and quality. They are very angular and rangy. The top line and underline and the lines of the sides are very irregular and oblique. The head is very long and narrow and the

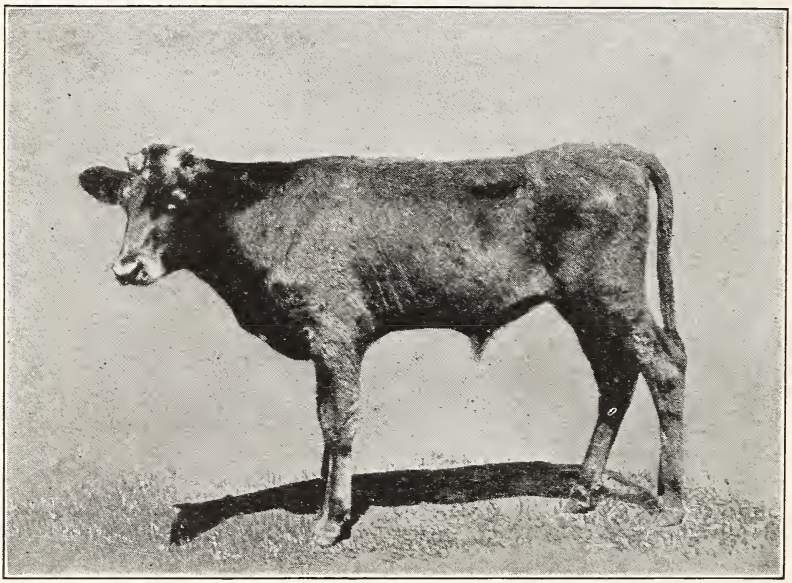

FIGURE 11.—Plain grade slaughter calf.

neck is very long and thin. The body is very narrow in proportion to its length. The legs are very long in proportion to depth of body and are set very close together. The fleshing of the shoulders, crops, back, loin, and rump is very thin and the lines of each of these parts are very empty, sunken, and hollowed out. The width of the animal through the shoulders, back, loin, and rump varies to a very great extent.

The animal has no apparent covering of fat over the top of the shoulders or rump and only an extremely thin covering over the back and loin. It is decidedly rough over these parts and the bones of the shoulders and hips and the backbone are decidedly prominent. There are only small deposits of fat over the brisket, in the flanks, and in the crotch around the udder or the cod or scrotum, and these parts appear decidedly empty or lacking in fat.

The animal is either very coarse or very refined and the bones of the legs are either very large or very small. The hide is either very thick or very thin and is decidedly unpliant. The hair is dry and harsh to a marked degree.

With the factor of fill eliminated, individuals of this grade (fig. 11) have a low dressing percentage. Their carcasses have a low percentage of flesh and a large percentage of bone.

Slaughter calves of this grade are only occasionally individuals of pronounced beef-type breeding but are, as a rule, animals in which physical characteristics resulting from dairy-type, scrub, or nondescript breeding predominate. They are received usually throughout the year at markets that are tributary to sections of the country where dairying is the principal livestock industry. They are more

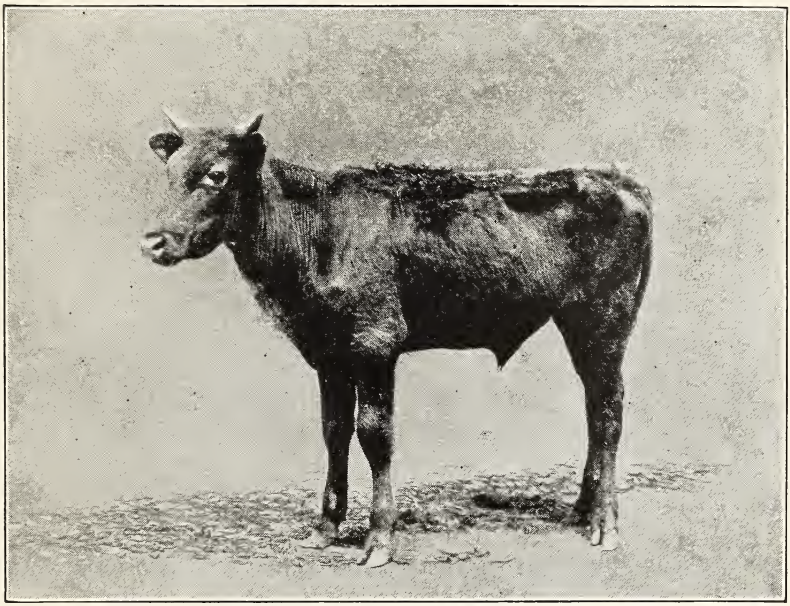

FIGURE 12.—Cull grade slaughter calf.

or less numerous at practically all markets throughout the year and during the late spring and the fall months they are especially numerous.

CULL OR NO. 5 GRADE SLAUGHTER CALVES

Cull, or No. 5, grade slaughter calves are extremely deficient in conformation, finish, and quality. They are extremely angular and rangy. The top line and under line and the lines of the sides are extremely irregular and oblique. The head is extremely long and narrow and the neck is extremely long and thin. Both head and neck are extremely narrow in proportion to length of body. The legs are extremely long in proportion to depth of body and are set very close together. The fleshing of the shoulders, back, loin, rump, thigh, and twist is extremely thin and the lines of each of these parts are extremely sunken or hollowed out. The width of the animal

through the shoulders, back, loin, and rump varies greatly. The different parts of the animal are so developed and balanced that the animal has, relatively speaking, an extremely low percentage of its weight in back, loin, rump, twist, and thigh.

The animal has no apparent covering of fat. Even the back and loin, from all indications, are entirely devoid of fat. It is extremely rough over the shoulders, hips, and rump, the bones of the shoulders and hips are extremely prominent, and most of the backbone and much of the bones of the ribs are sharply outlined. There are no discernible deposits of fat in the brisket, in the flanks, or in the crotch around the udder or the cod or scrotum.

Individuals of this grade are extremely refined or extremely coarse, and the bones of the legs are either very small or very large. The hide is either very thin or very thick and is usually very unpliant. The hair is very dry and harsh.

With the factor of fill eliminated, animals of this grade (fig. 12) have an extremely low dressing percentage and their carcasses have an extremely low percentage of flesh.

STOCKER AND FEEDER CALF SCHEDULE

Stocker and feeder calves may be defined as (young) bovine animals usually over 3 months old which, for a considerable length of time, have subsisted in part or entirely on other feeds than milk, and which are bought and sold on the market for stocker and feeder purposes.

From the above definition it is apparent that the terms stocker and feeder, when applied to calves, do not have as much significance as they do in the case of stocker and feeder cattle, since on the market the term stocker usually applies to cattle that are less than 18 months old and the term feeder usually applies to cattle that are 18 months or over in age. A similar distinction is not made on the market with regard to stocker and feeder calves. In actual market practice calves that are much alike are frequently sold to one man as stockers and to another as feeders. In practically all instances determination of the use to which they shall be put depends entirely on the opinion and circumstances of the purchaser and not to any extent on the animals themselves.

On the market, stocker and feeder calves of different sex condition, weight, conformation, finish, and quality may sell at widely different prices largely because of differences in value which they will probably have after they have been fed and returned to market.

Thus different market classes, weight-selection groups, and grades of stocker and feeder calves as indicated on the following schedule have arisen and are more or less generally recognized at most of the large central livestock markets.

During the greater part of each year, trading in calves for stocker and feeder purposes is of relatively little importance at most of the large central livestock markets. At the principal calf markets, however, large numbers of them are bought and sold for this use on each marketing day during the fall season when receipts of calves are usually at their peak. The principal markets for calves are Kansas City, Omaha, Denver, Fort Worth, and East St. Louis. During Sep-

tember, October, and November the trade in stocker and feeder calves is of great importance at these markets. During the same months trading in them is usually of considerable volume and importance at Chicago, Sioux City, St. Joseph, South St. Paul, and a few other of the larger and more important marketing centers.

Stocker and feeder calf schedule

Class	Weight selection	Grade
Steer	Lightweight, 350 pounds down.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
	Heavyweight, 350 pounds up.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
Heifer	Lightweight, 350 pounds down.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
	Heavyweight, 350 pounds up.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
Bull	Lightweight, 350 pounds down.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]
	Heavyweight, 350 pounds up.	Fancy or No. A1. Choice or No. 1. Good or No. 2. Medium or No. 3. Plain or No. 4.[1]

[1] Formerly designated Common.

CLASSES OF STOCKER AND FEEDER CALVES

As shown in the schedule, there are three classes of stocker and feeder calves which are based on the sex condition of the animals.

A market class of stocker and feeder calves consists of a number of individuals composing a lot or group of stocker and feeder calves in which each animal has the same sex condition. Hence there are three market classes of stocker and feeder calves—steer, heifer, and bull.

As a general rule any kind of livestock is sorted or divided into different market classes which are based on sex condition because practically all animals possess physical characteristics of conformation, finish, and quality that are peculiar to all animals of the same sex condition. This is true, because in time sex condition causes marked changes in the physical characteristics of an animal which go to make up its conformation, finish, and quality. When these differences of conformation, finish, and quality of the live animals become pronounced they bring about marked differences in the quantity, quality, or grade of the carcass and byproducts which the animals will produce when slaughtered.

In all but a few exceptional instances, the sex condition of stocker and feeder calves has not caused any marked changes in their conformation, finish, and quality, but the fact that they do have different sex condition insures that they will in time develop differences in conformation, finish, and quality which will seriously affect their market value. Hence, stocker and feeder calves of the different classes usually sell at considerably different prices on the market, for buyers anticipate a difference in their market value when they are fed and returned to market as slaughter cattle. Moreover, on the market, bull calves of the same weight selection are usually of less value, grade for grade, than are either steer or heifer calves. This is due largely to the fact that they are usually castrated by the buyer after purchasing. He assumes this added risk of loss from death as well as the loss from the delay in getting the animals once more in gaining condition after castration.

WEIGHT SELECTIONS OF STOCKER AND FEEDER CALVES

Stocker and feeder calves of any one of the three class show considerable variation or range in weight because of differences in age, type, breeding, feeding, handling, and care. Buyers at the market have decided preferences for different weights of stocker and feeder calves of the three classes, largely because of the systems followed in developing stocker and feeder calves, especially in respect to the length of the feeding period and methods of handling and feeding. Hence on the market, weight is a price factor of much importance and the classes of stocker and feeder calves are often sorted into lots according to their weight. In this circular these lots are designated as weight selections.

A weight selection may be defined as a group of stocker and feeder calves in which the weight of each individual in the group falls within certain specified limits. The weight selections generally used at livestock markets are shown in the stocker and feeder calf schedule on page 25.

GRADES OF STOCKER AND FEEDER CALVES

Weight selections of stocker and feeder calves enable buyers at the market to purchase steer, heifer, or bull calves of the desired weight, but calves of any of the different classes and of any given weight selection vary widely in quality and grade. Buyers at the market have decided preferences as to the grade of the animals they intend to feed and all stocker and feeder calves are bought and sold largely on the basis of their grade. Without doubt, grade is the most important price factor contributing to market value. Therefore, as the final step in the classifying and grading process, the weight selections of stocker and feeder calves are usually sorted into a number of grades.

Grade is determined by an animal's degree of merit for a given market use, as shown by the degree of conformation, finish, and quality it possesses when bought and sold.

In market practice there are five rather generally recognized grades of stocker and feeder calves: Fancy or No. A1, Choice or No. 1, Good or No. 2, Medium or No. 3, and Plain or No. 4.

It would be possible to have another grade of stocker and feeder calves—an Inferior or No. 5 grade—as calves having an extremely low degree of conformation, finish, and quality are not included in the Plain or No. 4 grade, which, on the market, is the lowest grade regularly traded in. But calves having a lower degree of conformation, finish, and quality than the Plain or No. 4 grade are rarely, if ever, traded in at the market as stockers and feeders. As a rule, such calves are sold to slaughterers as Cull or No. 5 grade slaughter calves. Hence, an Inferior or No. 5 grade of stocker and feeder calves is not considered in this circular.

The grades of stocker and feeder calves which are regularly traded in at the market are directly correlated with corresponding grades of slaughter cattle which it is thought they will produce when finished and returned to the market.

In the description of the grades of stocker and feeder calves, no attempt has been made to describe all the possible combinations of the various degrees of perfection of the physical characteristics of an animal's conformation, finish, and quality which different animals of the same grade may possess. In each instance the grade description given is for an animal that may be considered as typical of the grade.

GRADE DESCRIPTIONS OF STOCKER AND FEEDER CALVES

There are five grades of stocker and feeder calves: Fancy or No. A1, Choice or No. 1, Good or No. 2, Medium or No. 3, and Plain or No. 4.

FANCY OR NO. A1 GRADE

Fancy or No. A1 grade stocker and feeder calves approach very closely the top of the standard of conformation, finish, and quality. They are rectangular and very compact in general shape or build. Top line and underline are approximately straight and level and the lines of the sides are very nearly straight and parallel. The head is very short and wide and the neck is very short. Both head and neck are very wide and deep in proportion to length of body, and the legs are set very wide apart and are very short in proportion to depth of body. The chest is very wide and deep and the animal has an exceptionally good middle, being very full in the crops, with a very straight wide back and loin, very long, well-sprung ribs, and a belly which is very wide and deep but not paunchy. The flanks are low. The hips and rump are wide and even and the tail head is even with the back line. The thigh is very wide and deep and the twist is very deep, the seam of the twist appearing very low. All parts are moderately thickly fleshed, causing the lines of shoulders, back, loin, rump, and thigh to appear moderately full, plump, and well rounded.

The animal has sufficient fat covering over the top of the shoulders, back, loin, and rump to make it decidedly smooth over these parts. There are moderately large deposits of fat over the brisket, in the flanks and in the crotch, especially around the udder, or the cod or scrotum, this condition being indicated by a pronounced degree of fullness of these parts.

The animal is moderately refined and the bones of the legs are of medium size. The hide is moderately thick and pliable and the hair is fine, soft, and silky. The breeding of the animal indicates that it will have a tendency, during the fattening process, to deposit a relatively large proportion of fat in its muscles as intramuscular and intercellular fat.

Animals of this grade are purebred, cross-bred, or high-grade individuals of beef type. Load lots of this grade must be uniform in age, weight, color, and breeding. They are scarce at all markets but are usually found in limited numbers at a few of the larger markets during the late summer and fall months, but very rarely during other months of the year.

CHOICE OR NO. 1 GRADE

Choice or No. 1 grade stocker and feeder calves are markedly superior in conformation, finish, and quality. They are approximately rectangular and are compact in general shape or build. Top line and underline are approximately straight and level and the lines of the sides are nearly straight and parallel. The head is short and wide and the neck is short. Both head and neck are wide and deep in proportion to length of body, and the legs are set wide apart and are short in proportion to depth of body. The chest is wide and deep and the animal has a decidedly good middle, the crops being full with a straight, wide back and loin, the ribs being long and well sprung, the belly wide and deep but not paunchy, and the flanks low. The hips are wide and the rump is wide and even, and the tail head is even with the back line. The thigh is wide and deep, and the twist is deep, and the seam of the twist is low. All parts are thick in fleshing which causes the lines of the shoulders, crops, back, loin, rump, and thigh to appear moderately full, plump, and well rounded. The animal has approximately the same width through the shoulders, back, loin, hips, and rump.

The animal has a moderate fat covering over the top of the shoulders, back, loin, and rump and is moderately smooth over these parts. There are moderate deposits of fat over the brisket, in the flank, and in the crotch, especially around the udder or the cod or scrotum.

The animal shows moderate refinement and smoothness. The bones of the legs are of medium size. The hide is moderately thick and pliable and the hair is fine, soft, and silky. The breeding of the animal indicates that it will have a tendency, during the fattening process, to deposit a relatively large percentage of fat within its muscles as intramuscular and intercellular fat.

Animals of this grade are invariably purebred, cross-bred, or high-grade individuals of beef type. Load lots of this grade are sometimes mixed as regards the different breeds of beef-type cattle and may vary slightly in age and weight as well as weight for age. Animals of this grade are usually on sale in fairly liberal numbers at most of the larger markets during the late summer and fall months but are offered only irregularly and in limited numbers during the remainder of the year.

GOOD OR NO. 2 GRADE

Good or No. 2 grade stocker and feeder calves have a moderately high degree of conformation, finish, and quality. In general shape or build they tend to be rectangular and compact. Top line and underline tend to be straight and level and the lines of the sides tend to be straight and parallel. The head is moderately short and wide and the neck is moderately short. Both head and neck are moderately wide and deep in proportion to length of body, and the legs are set moderately wide apart and are moderately short in proportion to depth of body. The chest is moderately wide and deep and the animal has a good middle, is moderately full in the crops, and has a moderately wide back and loin, moderately long well-sprung ribs and a belly which is moderately wide and deep but slightly paunchy, and moderately low flanks. The hips are moderately wide and the rump is moderately wide and even, but the tail head usually appears slightly high or drooped when compared with the rest of the top line. The thigh is moderately wide and deep, the twist moderately deep, and the seam of the twist moderately low. All parts are slightly thin in fleshing and the lines of the different parts appear slightly empty or sunken. The animal tends to be of the same or uniform width through the shoulders, back, loin, hips, and rump.

The animal usually has a thin fat covering over the top of shoulders, back, loin, and rump and appears slightly rough over these parts, the bones of each part being slightly prominent. There are small deposits of fat over the brisket and in the flank and crotch especially around the udder and the cod or scrotum.

The animal is usually either slightly too coarse or too refined, the bones of the legs being either slightly too large or too small. The hide is either slightly too thick or too thin and is slightly unpliant. The hair is usually slightly dry and harsh. The breeding of the animal indicates that it will have a tendency during the fattening process to deposit a moderately large percentage of fat within its muscles as intramuscular and intercellular fat.

Animals of this grade are usually cross-bred or high-grade individuals of beef type. Individuals contained in a load lot usually vary considerably in respect to the different breeds of beef-type cattle, in age and weight, and in weight as related to age. These animals are usually on sale in liberal numbers at the larger markets during the late summer and fall months, and limited numbers of them can usually be obtained at the larger markets at most other times throughout the year.

MEDIUM OR NO. 3 GRADE

Medium or No. 3 grade stocker and feeder calves are slightly deficient in conformation, finish, and quality. They are slightly angular and rangy in general shape or build. Top line and underline and the lines of the sides are slightly irregular and oblique. The head is slightly long and narrow and the neck is slightly long. Both head and neck are slightly rangy, being slightly narrow in proportion to length of body and the legs are set slightly too close together

and are slightly too long in proportion to depth of body. The chest is slightly narrow and often lacking in depth, and the animal has a slightly poor middle, being slightly sunken or hollow in the crops, and has a slightly narrow back and loin. It has slightly short flat ribs, a paunchy belly, and slightly high flanks. The hips are slightly narrow, and the rump is slightly narrow and peaked, the tail head being either high or dropped when compared with the rest of the top line. The thighs are slightly narrow and tapering, the twist is slightly shallow, and the seam of the twist slightly high. All parts of the animal are thinly fleshed, the lines of the shoulders, crops, back, loin, rump, and thigh appearing sunken and hollow.

The animal has a thin fat covering over the back and loin and appears rough over the shoulders, hips, and rump, and the bones of the shoulders and hips, and much of the backbone are prominent to a marked degree. There are small deposits of fat over the brisket, in the flanks, and in the crotch, especially around the udder and the cod or scrotum.

The animal is slightly too coarse or refined and the bones of the legs slightly too large or too small. The hide is slightly too thick or too thin and is unpliant. The hair is dry and harsh. The breeding of the animal indicates that during the fattening process a very small percentage of fat will be deposited within its muscles as intramuscular and intercellular fat.

Individuals of this grade usually have at least a predominance of the color markings of one or the other of the different breeds of beef-type cattle. Their general conformation, however, indicates that they carry at least a moderately high percentage of the blood of animals of dairy-type, scrub, a nondescript breeding. At most of the larger markets the supply of such animals often exceeds the demand during the late summer and fall months, but as a rule they are offered in only limited numbers during the remainder of the year. Individuals in a given carload of calves of this grade usually vary considerably in breeding, age, and weight, particularly in weight for age.

PLAIN OR NO. 4 GRADE

Plain or No. 4 grade stocker and feeder calves are very deficient in conformation, finish, and quality. They are angular and rangy to a high degree in their general shape or build. The top line and underline and the lines of the sides are very irregular and oblique. The head is long and narrow and the neck is long. Both head and neck are very narrow in proportion to their length of body and the legs are set very near each other and are very long in proportion to depth of body. The chest is very narrow and the animal has a very poor middle, being sunken and hollow in the crops, a very narrow back and loin, very short, flat ribs, a very paunchy belly, and very high flanks. The hips are narrow, the rump is narrow and very peaked, and the tail head is very high or drooped, as compared with the rest of the top line. The thighs are very narrow and tapering, the twist is very shallow, and the seam of the twist very high. All parts of the animal are very thinly fleshed, the lines of the shoulders, crops, back, loin, rump, and thigh appearing very sunken and hollow. The

animal is very uneven in its width through the shoulders, back, loin, and rump.

The very apparent lack of fat covering over the shoulders, back, loin, and rump causes the bones of the shoulders and the hips and much of the backbone to be very prominent, and many of the ribs are plainly outlined. Apparently there are no deposits of fat over the brisket, in the flanks, or in the crotch around the udder or the cod or scrotum.

The animal is either very coarse or very refined and the bones of the legs are either very large or very small. The hide is either very thick or very thin and is very unpliant and tight. The hair is very dry and harsh and has a lifeless appearance. The breeding of the animal indicates that it will have a tendency, during the fattening process, to deposit only a small amount, if any, fat within its muscles as intramuscular and intercellular fat.

Individuals of this grade indicate by their general conformation and color markings that they are of mixed breeding. Load lots of animals of this grade usually vary widely in breeding, age, and weight, particularly with respect to weight for age. The animals are marketed throughout the year at most markets, but the supply is greatest during the fall months.

ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE WHEN THIS PUBLICATION WAS LAST PRINTED

Secretary of Agriculture	HENRY A. WALLACE.
Under Secretary	M. L. WILSON.
Assistant Secretary	HARRY L. BROWN.
Director of Information	M. S. EISENHOWER.
Director of Extension Work	C. W. WARBURTON.
Director of Finance	W. A. JUMP.
Director of Personnel	ROY F. HENDRICKSON.
Director of Research	JAMES T. JARDINE.
Director of Marketing and Regulatory Work	A. G. BLACK.
Solicitor	MASTIN G. WHITE.
Land Use Coordinator	M. S. EISENHOWER.
Office of Plant and Operation	ARTHUR B. THATCHER, *Chief.*
Office of C. C. C. Activities	FRED W. MORRELL, *Chief.*
Office of Experiment Stations	JAMES T. JARDINE, *Chief.*
Office of Foreign Agricultural Relations	LESLIE A. WHEELER, *Director.*
Agricultural Adjustment Administration	R. M. EVANS, *Administrator.*
Bureau of Agricultural Chemistry and Engineering.	HENRY G. KNIGHT, *Chief.*
Bureau of Agricultural Economics	H. R. TOLLEY, *Chief.*
Agricultural Marketing Service	C. W. KITCHEN, *Chief.*
Bureau of Animal Industry	JOHN R. MOHLER, *Chief.*
Commodity Credit Corporation	CARL B. ROBBINS, *President.*
Commodity Exchange Administration	J. W. T. DUVEL, *Chief.*
Bureau of Dairy Industry	O. E. REED, *Chief.*
Bureau of Entomology and Plant Quarantine	LEE A. STRONG, *Chief.*
Farm Security Administration	W. W. ALEXANDER, *Administrator.*
Federal Crop Insurance Corporation	LEROY K. SMITH, *Manager.*
Federal Surplus Commodities Corporation	MILO R. PERKINS, *President.*
Food and Drug Administration	WALTER G. CAMPBELL, *Chief.*
Forest Service	FERDINAND A. SILCOX, *Chief.*
Bureau of Home Economics	LOUISE STANLEY, *Chief.*
Library	CLARIBEL R. BARNETT, *Librarian.*
Division of Marketing and Marketing Agreements.	MILO R. PERKINS, *In Charge.*
Bureau of Plant Industry	E. C. AUCHTER, *Chief.*
Rural Electrification Administration	ROBERT B. CRAIG, *Asst. Admin.*
Soil Conservation Service	H. H. BENNETT, *Chief.*
Sugar Division	JOSHUA BERNHARDT, *Chief.*
Weather Bureau	FRANCIS W. REICHELDERFER, *Chief.*

U. S. GOVERNMENT PRINTING OFFICE: 1939